

Biobleaching Of Spent Re Nery Processing Catalyst Using

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Bioleaching Of Spent Refinery 2.2. Spent catalyst particle size and surface area. Mean particle diameter of spent FCC catalyst was found to be higher than that of a fresh catalyst due to the deposition of coke and other metal contaminants during the petroleum refining process. Beyond the expectation bioleaching resulted in an approximate 13% reduction in the mean particle diameter, and the deposited coke and some metal ... Bioleaching of spent refinery catalysts: A review ... A spent refinery processing catalyst was physically and chemically characterized, and subjected to one-step and two-step bioleaching processes using *Aspergillus niger*. During bioleaching of the spent catalysts of various particle sizes ("as received", 100–150 μm , <37 μm , and $x = 2.97$ (average) μm) and pulp densities, the biomass dry weight and pH were determined. Bioleaching of spent refinery processing catalyst using ... Highlights The kinetics of bioleaching of metals from a spent catalyst, using *Aspergillus niger* was studied. Most effective bioleaching variables were selected in accordance with the Plackett–Burman design. Determinations of organic acid concentration showed noticeable variation during bioleaching. Predictions by the model showed that diffusion through the solid matrix is the rate ... Bioleaching kinetics of a spent refinery catalyst using ... overall, the laboratory-scale bioleaching of the spent refinery catalyst using various adapted microorganism strains shows a promising first step towards bioleaching of a used substance. (PDF) A Bioleaching Regeneration and Recovery of Spent

... The feasibility of column bioleaching in the recovery of valuable metals (Ni, V, Mo, and Al) from an uncrushed petroleum refinery spent hydroprocessing catalyst using *Acidithiobacillus thiooxidans* has been reported. Different operational strategies such as submerged bioleaching in continuous mode, submerged bioleaching in resting period mode, free flow bioleaching in continuous mode, and free ... Column bioleaching of metals from refinery spent catalyst ... With bioleaching, the leached and recovered metals may be recycled and re-used as raw materials in the metal-manufacturing industries. Using spent FCC catalyst as a model, the objective of this work is to demonstrate the use of *Aspergillus niger* in leaching metals from spent catalyst.

2. Materials and methods

2.1. Fungal strain and growth conditions

Bioleaching of spent fluid catalytic cracking catalyst ... Bioleaching uses biodegradable organic acids, thereby making the process environmental friendly as compared to chemical leaching. In this work, bioleaching of aluminium (Al) metal from spent ... (PDF) Bioleaching of Al from spent fluid catalytic ... The bioleaching process is achieved by one-step, two-step and spent medium-step in batch mode or by continuous mode reported to be promising on quantitative extraction of various metals (Ni, Co ... (PDF) Bioleaching: A microbial process of metal recovery ... Bioleaching is a simple and effective technology for metal extraction from low-grade ores and mineral concentrates. Metal recovery from sulfide minerals is based on the activity of chemolithotrophic bacteria, mainly *Thiobacillus ferrooxidans* and *T. thiooxidans*, which convert insoluble metal sulfides into soluble metal

sulfates. Bioleaching: metal solubilization by microorganisms | FEMS ... Abstract - This study evaluates the recovery of heavy metals employing a spent catalyst from the hydrodesulfurization (HDS) of diesel, with no chemical, thermal or physical pretreatment, using the bacterial strain *Acidithiobacillus thiooxidans* FG-01. Direct and indirect bioleaching tests were carried out in Erlenmeyer flasks (500 mL). BIOLEACHING OF METALS FROM A SPENT DIESEL ... Pradhan et al [11], conducted bioleaching of spent catalyst using *Acidithiobacillus ferrooxidans*, maximum Mo leaching of 53% was observed and to recover the remaining Mo a chemical leaching step ... (PDF) A novel sequential process of bioleaching and ... such solid wastes of secondary sources, such as, spent refinery catalyst, electronic wastes, ... A spent medium bioleaching study was performed with biogenerated Fe³⁺ and H₂SO₄. (PDF) Bioleaching approach for extraction of metal values ... Cell-free spent medium generated during growth of *A. terreus* strain ML3-1 and *Paecilomyces* spp. strain WE3-F in the presence of monazite leached rare earths to concentrations 1.7–3.8 times those of HCl solutions of comparable pH, indicating that compounds exogenously released by these organisms contribute substantially to leaching. Bioleaching of rare earth elements from monazite sand ... In addition, studies show that zinc, nickel and cobalt can also largely be extracted by the process of bioleaching (Rawlings, Douglas, and Johnson 2007). The inputs to the process of bioleaching mainly depend on the type of microorganism used and should be extremely favorable for the dissolution of the metal. Mission

2015: Bioleaching Bioleaching Certain bacteria can break down low-grade ores to produce an acidic solution containing copper ions. The solution is called a leachate and the process is called bioleaching . Biological methods of metal extraction - Higher - Material ... Bioleaching is the extraction of metals from their ores through the use of living organisms. This is much cleaner than the traditional heap leaching using cyanide. Bioleaching is one of several applications within biohydrometallurgy and several methods are used to recover copper, zinc, lead, arsenic, antimony, nickel, molybdenum, gold, silver, and cobalt. Bioleaching - Wikipedia Leaching is the process of a solute becoming detached or extracted from its carrier substance by way of a solvent.. Leaching is a naturally occurring process which scientists have adapted for a variety of applications with a variety of methods. Specific extraction methods depend on the soluble characteristics relative to the sorbent material such as concentration, distribution, nature, and size. Leaching (chemistry) - Wikipedia Early life. The third of four boys, Remilson Santos Nery was born on March 31, 1961 in Rio de Janeiro, Brazil. Remilson Nery spent his entire childhood in Irajá, a working-class district of north Rio. At an early age, he began his music education (guitar and music theory) with a professional guitarist and a religious sister fascinated by Brazilian traditional and classical music. Remilson Nery - Wikipedia Roughly two-thirds of Black and Hispanic students live in districts where schools are starting the year remotely. By contrast, most white students—about 70 percent—live in school districts ... Educational inequality likely to widen this fall as

white ... WBC/IBF light heavyweight champion Artur Beterbiev will now face Adam Deines on Sept. 25 in Yekaterinburg, Russia, Top Rank has confirmed. Talking Book Services. The Mississippi Library Commission serves as a free public library service for eligible Mississippi residents who are unable to read ...

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